



~~CONTAINS NO CBI~~

Form Approved
OMB No. 2010-0019
Approval Expires 12-31-89

09 AUG -7 AM 8:34

OFFICE



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90-890000586

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Comprehensive Assessment Information Rule
REPORTING FORM

When completed, send this form to:

Document Processing Center
Office of Toxic Substances, TS-790
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: _____

Document
Control Number: _____

Docket Number: _____

PART A GENERAL REPORTING INFORMATION

completed in response to the Federal Register Notice of..... [0] [7] [1] [3] [8] [9]
CBI mo. day year

- Name of chemical substance Toluene Diisocyanate

X/P processor reporting for customer who is a processor 5

3

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

Yes ☒ Go to question 1.04

☐

No ☐ Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

Yes 1

☐

☒ No 2

b. Check the appropriate box below:

☐ You have chosen to notify your customers of their reporting obligations

Provide the trade name(s)

☐ You have chosen to report for your customers

☒ You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

Trade name Solithane 113/300/T12

☐

Is the trade name product a mixture? Circle the appropriate response.

Yes 1

☒ No 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

"I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

☐

Gary L. Perkins
NAME

Gary L. Perkins
SIGNATURE

July 13, 1989
DATE SIGNED

Manager of Facilities
TITLE

(407) 727-0660 X-2531
TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

- 1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You CBI ☐ are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

_____ NAME	_____ SIGNATURE	_____ DATE SIGNED
_____ TITLE	(_____) - TELEPHONE NO.	_____ DATE OF PREVIOUS SUBMISSION

- 1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI ☐ "My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

_____ NAME	_____ SIGNATURE	_____ DATE SIGNED
_____ TITLE	(_____) - TELEPHONE NO.	

☐ Mark (X) this box if you attach a continuation sheet.

PART B CORPORATE DATA

1.09 Facility Identification

CBI Name [D][B][A][S][Y][S][T][E][M][S][I][N][C.]
[] Address [P][O][B][O][X][5][5][0]
Street
[M][E][L][B][O][U][R][N][E]
City
[F][L] [3][2][9][0][2]--[0][5][5][0]
State Zip

Dun & Bradstreet Number[0][4]--[5][1][4]--[1][4][1][3]
EPA ID NumberFLD.[0][4][5][1][4][1][4][1][3]
Employer ID Number[5][9][0][9][9][6][4][1]7
Primary Standard Industrial Classification (SIC) Code[] [] [] []
Other SIC Code[] [] [] []
Other SIC Code[] [] [] []

1.10 Company Headquarters Identification

CBI Name [D][B][A][S][Y][S][T][E][M][S][I][N][C.]
[] Address [P][O][B][O][X][5][5][0]
Street
[M][E][L][B][O][U][R][N][E]
City
[F][L] [3][2][9][0][2]--[0][5][5][0]
State Zip

Dun & Bradstreet Number[0][4]--[5][1][4]--[1][4][1][3]
Employer ID Number[5][9][0][9][9][6][4][1]7

[] Mark (X) this box if you attach a continuation sheet.

1.11 Parent Company Identification

CBI Name [D][B][A][S][Y][S][T][E][M][S][,][I][N][C][]
[] Address [P][O][B][O][X][5][5][0][]
Street
[M][E][L][B][O][U][R][N][E][]
City
[F][L][] [3][2][9][0][2]--[0][5][5][0]
State Zip
Dun & Bradstreet Number []-[]-[]

1.12 Technical Contact

CBI Name [G][A][R][Y][L][P][E][R][K][I][N][S][]
[] Title [M][A][N][A][G][E][R][O][F][F][A][C][I][L][I][T][I][E][S][]
Address [P][O][B][O][X][5][5][0][]
Street
[M][E][L][B][O][U][R][N][E][]
City
[F][L][] [3][2][9][0][2]--[0][5][5][0]
State Zip
Telephone Number [4][0][7]--[7][2][7]--[0][6][6][0]

1.13 This reporting year is from [0][7] [8][8] to [0][6] [8][9]
Mo. Year Mo. Year

[] Mark (X) this box if you attach a continuation sheet.

[illegible][illegible]

8

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

Classification

Quantity (kg/yr)

☐

Manufactured _____

Imported _____

Processed (include quantity repackaged) _____

Of that quantity manufactured or imported, report that quantity:

In storage at the beginning of the reporting year _____

For on-site use or processing _____

For direct commercial distribution (including export) _____

In storage at the end of the reporting year _____

Of that quantity processed, report that quantity:

In storage at the beginning of the reporting year 0

Processed as a reactant (chemical producer) 0

Processed as a formulation component (mixture producer) 0

Processed as an article component (article producer) 0

Repackaged (including export) 0

In storage at the end of the reporting year 0

☐ Mark (X) this box if you attach a continuation sheet.

PART C IDENTIFICATION OF MIXTURES

- 1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

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Component Name	Supplier Name	Average % Composition by Weight (specify precision, e.g., 45% ± 0.5%)
Toluene Diisocyanate	ABLESTIK LABORATORIES	< 5%
Inert Ingredients	" "	95%
		Total 100%

☐ Mark (X) this box if you attach a continuation sheet.

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

☐ Year ending [0][6] [8][6]
Mo. Year

Quantity manufactured N/A kg

Quantity imported N/A kg

Quantity processed N/A kg

Year ending [0][6] [8][5]
Mo. Year

Quantity manufactured N/A kg

Quantity imported N/A kg

Quantity processed N/A kg

Year ending [0][6] [8][4]
Mo. Year

Quantity manufactured N/A kg

Quantity imported N/A kg

Quantity processed N/A kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

☐ Continuous process 1

Semicontinuous process 2

Batch process 3

☐ Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

- ☐ Continuous process 1
- ☐ Semicontinuous process 2
- ☒ Batch process 3

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

- ☐ Manufacturing capacity kg/yr
- ☐ Processing capacity kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

<input type="checkbox"/>	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase			
Amount of decrease			

☐ Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

☐

	<u>Days/Year</u>	<u>Average Hours/Day</u>
Process Type #1 (The process type involving the largest quantity of the listed substance.)		
Manufactured	<u>N/A</u>	<u>N/A</u>
Processed	<u>4</u>	<u>2</u>
Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)		
Manufactured	<u>N/A</u>	<u>N/A</u>
Processed	<u>N/A</u>	<u>N/A</u>
Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)		
Manufactured	<u>N/A</u>	<u>N/A</u>
Processed	<u>N/A</u>	<u>N/A</u>

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

☐

Maximum daily inventory	_____	kg
Average monthly inventory	_____	kg

☐ Mark (X) this box if you attach a continuation sheet.

2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

☐

<u>CAS No.</u>	<u>Chemical Name</u>	<u>Byproduct, Coproduct or Impurity¹</u>	<u>Concentration (%) (specify \pm % precision)</u>	<u>Source of By-products, Coproducts, or Impurities</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

¹Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct
C = Coproduct
I = Impurity

☐ Mark (X) this box if you attach a continuation sheet.

- 2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to ☐ the instructions for further explanation and an example.)

CBI

a. Product Types ¹	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users ²
K	100 %	100 %	H

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) <u>MILITARY</u>

☐ Mark (X) this box if you attach a continuation sheet.

- 2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types ¹	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users ²
K	100%	100%	H

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) <u>MILITARY</u>

☐ Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

☐

a.	b.	c.	d.
Product Type ¹	Final Product's Physical Form ²	Average % Composition of Listed Substance in Final Product	Type of End-Users ³
K	F 2	100%	H

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the final product's physical form:

A = Gas	F2 = Crystalline solid
B = Liquid	F3 = Granules
C = Aqueous solution	F4 = Other solid
D = Paste	G = Gel
E = Slurry	H = Other (specify) _____
F1 = Powder	

³Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) <u>MILITARY</u>

☐ Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the
CBI listed substance to off-site customers.

- ☐ Truck 1
Railcar 2
Barge, Vessel 3
Pipeline 4
Plane 5
Other (specify) _____ 6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers
CBI or prepared by your customers during the reporting year for use under each category
of end use listed (i-iv).

☐

Category of End Use

i. Industrial Products

Chemical or mixture N/A kg/yr
Article 0.01 kg/yr

ii. Commercial Products

Chemical or mixture N/A kg/yr
Article N/A kg/yr

iii. Consumer Products

Chemical or mixture N/A kg/yr
Article N/A kg/yr

iv. Other

Distribution (excluding export) N/A kg/yr
Export N/A kg/yr
Quantity of substance consumed as reactant N/A kg/yr
Unknown customer uses N/A kg/yr

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

PART A GENERAL DATA

3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.
CBI The average price is the market value of the product that was traded for the listed substance.

☐

<u>Source of Supply</u>	<u>Quantity (kg)</u>	<u>Average Price (\$/kg)</u>
The listed substance was manufactured on-site.	<u>N/A</u>	<u>N/A</u>
The listed substance was transferred from a different company site.	<u>N/A</u>	<u>N/A</u>
The listed substance was purchased directly from a manufacturer or importer.	<u>0.1</u>	<u>\$50.00</u>
The listed substance was purchased from a distributor or repackager.	<u>N/A</u>	<u>N/A</u>
The listed substance was purchased from a mixture producer.	<u>N/A</u>	<u>N/A</u>

3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

☐

- ☒ Truck 1
- Railcar 2
- Barge, Vessel 3
- Pipeline 4
- ☒ Plane 5
- Other (specify) _____ 6

☐ Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your
CBI facility.

☐

- Bags 1
Boxes 2
Free standing tank cylinders 3
Tank rail cars 4
Hopper cars 5
Tank trucks 6
Hopper trucks 7
Drums 8
Pipeline 9
Other (specify) _____ 10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

Tank cylinders mmHg
Tank rail cars mmHg
Tank trucks mmHg

☐ Mark (X) this box if you attach a continuation sheet.

PART B RAW MATERIAL IN THE FORM OF A MIXTURE

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

CBI

☐

<u>Trade Name</u>	<u>Supplier or Manufacturer</u>	<u>Average % Composition by Weight (specify \pm % precision)</u>	<u>Amount Processed (kg/yr)</u>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>	<hr/>

☐ Mark (X) this box if you attach a continuation sheet.

PART C RAW MATERIAL VOLUME

3.05 State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

☐

	Quantity Used (kg/yr)	% Composition by Weight of Listed Sub- stance in Raw Material (specify \pm % precision)
Class I chemical	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
Class II chemical	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
Polymer	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

- 4.01 Specify the percent purity for the three major¹ technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI

☐

	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	_____ % purity	_____ % purity	<u>95</u> % purity
Technical grade #2	_____ % purity	_____ % purity	_____ % purity
Technical grade #3	_____ % purity	_____ % purity	_____ % purity

¹Major = Greatest quantity of listed substance manufactured, imported or processed.

- 4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes 1

No 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company 1

Another source 2

☐ Mark (X) this box if you attach a continuation sheet.

MATERIAL SAFETY DATA SHEET

1. PRODUCT IDENTIFICATION

TRADE NAME: Solithane 113/300/T12

CHEMICAL NAMES: Isocyanate Terminated Polyol

MANUFACTURER'S NAME: ABLESTIK LABORATORIES

ADDRESS: 833 West 182nd Street, Gardena, CA 90248 (213) 532-9341

REVISION DATE: 01/11/89

II HAZARDOUS INGREDIENTS

<u>CHEMICAL NAMES</u>	<u>CAS NUMBERS</u>	<u>PERCENT</u>	<u>EXPOSURE LIMIT</u>	
			<u>ACGIH(TWA)</u>	<u>OSHA(PEL)</u>
Toluene diisocyanate	584-84-9	< 5	0.005ppm	0.02ppm

III PHYSICAL PROPERTIES

VAPOR DENSITY (AIR=1): > 1

SPECIFIC GRAVITY: 1.2

SOLUBILITY IN WATER: Not applicable

VAPOR PRESSURE, mm Hg at 20°C: < 0.1

EVAPORATION RATE (ETHER =1): < 1

APPEARANCE AND ODOR: Pale yellow liquid; pungent odor

MELTING POINT(°F): Not applicable

BOILING POINT (°F @ 760 mm Hg): 482°

PERCENT VOLATILE BY VOLUME: < 6

IV FIRE AND EXPLOSION

FLASH POINT, °F (GIVE METHOD): 200° (Setaflash)

AUTOIGNITION TEMPERATURE: Not determined

FLAMMABLE LIMITS IN AIR, VOLUME %: LOWER Not determined UPPER Not determined

FIRE EXTINGUISHING MATERIALS: Dry chemical, foam.

FIRE EXTINGUISHING PROCEDURES: Wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

V HEALTH HAZARD INFORMATION

SYMPTOMS OF OVEREXPOSURE FOR EACH POTENTIAL ROUTE OF EXPOSURE

INHALED: Unknown for product mixture. Inhalation of isocyanate vapors can produce severe irritation of the mucous membranes in the respiratory tract, i.e. nose, throat, and lungs. Exposure of humans to concentrations of isocyanate vapor in excess of the maximum acceptable concentration has caused illness characterized by breathlessness, chest discomfort and reduced pulmonary function. Massive exposure to high concentrations has caused, within minutes, irritation of the trachea and larynx and severe coughing spasms. Concentrations of isocyanate vapors should be maintained below the TLV by engineering controls. Can cause sensitization in humans. TDI Inhalation-Human TClO: 0.02ppm/2Y:PUL. TDI Inhalation-Human TClO: 0.5ppm: IRR. Symptoms of overexposure may be delayed and could include dry cough, chest tightness, wheezing, shortness of breath, asthmatic type symptoms

CONTACT WITH SKIN: Unknown for product mixture. Isocyanates react with skin protein and tissue moisture. If not promptly removed, liquid spills on the skin can cause reddening, swelling, and blistering of exposed skin. REPEATED SKIN CONTACT HAS CAUSED SKIN SENSITIZATION IN HUMANS AND SHOULD BE AVOIDED. TDI: Skin-Rabbit: 500 mg/24H MOD. Overexposure may cause irritation, dermatitis and possible skin sensitization given prolonged or repeated skin contact.

CONTACT WITH EYES: Unknown for the mixture. Liquid isocyanates splashed into the eyes can be harmful to the delicate eye tissue and must be avoided. Injury results from reaction of the isocyanate with the eye fluid which may dehydrate the tissue and result in severe irritation of the eyelid and possible damage to the cornea (corneal opacity). Exp

to high concentrations of isocyanate vapor can lead to formation of solid crystals in the eye fluid causing mechanical irritation of the eyes hours after exposure. TDI Eye-Rabbit: 100 mg SEV. Overexposure can cause irritation, tearing, reddening and blurred vision.

ABSORBED THROUGH SKIN: Isocyanates react with skin protein and tissue moisture. Absorption through skin may be harmful.

SWALLOWED: Unknown for the mixture. Animal experiments indicate that the toxic effects of TDI or polymeric isocyanates, when ingested, are slight. The LD50 in rats for TDI is 5840 mg/kg. From these experiments, it is believed that ingestion of TDI or polymeric isocyanates would not be fatal to humans, but could result in irritation and corrosive action on the mouth and stomach tissue. Overexposure may cause nausea, vomiting, and gastrointestinal pain.

HEALTH EFFECTS OR RISKS FROM EXPOSURE:

ACUTE: See symptoms of overexposure, section V.

CHRONIC: Unknown for product mixture. Toluene Diisocyanate(TDI) is considered a suspect carcinogen as tested by National Toxicology Program, 1983, in rats and female mice. Administered by gavage to rats, TDI caused subcutaneous neoplasms or cancers in both sexes. Additionally, males developed pancreatic neoplasms and females pancreatic, liver and mammary neoplasms. In mice similarly exposed, TDI caused circulatory neoplasms and cancers (combined) and liver neoplasms in females but was not carcinogenic to males. (NTP 1983 Program Tech Report on Carcinogenic Study of Commercial Grade of TDI.)

FIRST AID: EMERGENCY PROCEDURE

EYE CONTACT: Immediately flush with water for 15 minutes lifting the upper and lower eyelids occasionally and obtain immediate medical attention.

SKIN CONTACT: Wash immediately with soap and water. If irritation persists, seek medical attention immediately

INHALED: Remove to fresh air immediately. Administer artificial respiration as required. Obtain medical attention.

INGESTION: Do not induce vomiting. Obtain immediate medical attention. If unavailable, contact nearest Poison Control Center.

SUSPECTED CANCER AGENT? Toluene diisocyanate is considered to be carcinogenic by NTP.

VI REACTIVITY DATA

STABILITY: ☒ STABLE ☐ UNSTABLE

CONDITIONS TO AVOID: Heat prior to cure.

INCOMPATIBILITY (MATERIALS TO AVOID): Moisture, strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS (INCLUDING COMBUSTION PRODUCTS):

Carbon monoxide, carbon dioxide, nitrogen oxides, aromatic amines, aldehydes, and hydrogen cyanide

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

CONDITIONS TO AVOID: None known

VII SPILL, LEAK AND DISPOSAL

SPILL RESPONSE PROCEDURES: Wipe up with solvent saturated toweling and collect in an appropriate container for disposal.

PREPARING WASTES FOR DISPOSAL: Dispose in approved chemical disposal area or in a manner which complies with all local, state and federal regulations.

VIII SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: Provide adequate ventilation to minimize inhalation. Mechanical (local exhaust) recommended for all spray operations and elevated temperature uses.

RESPIRATORY PROTECTION: Wear NIOSH-MSHA approved self-contained positive pressure breathing apparatus as necessary within equipment limitations. Contaminant levels will vary dependent on the operation.

EYE PROTECTION: Safety goggles with side shields.

GLOVES: Rubber

OTHER CLOTHING AND EQUIPMENT: Protective equipment to cover exposed areas.

WORK PRACTICES, HYGIENIC PRACTICES: Vent curing oven to outdoors.

OTHER HANDLING AND STORAGE REQUIREMENTS: Store frozen at all times.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Avoid contact with skin, eyes and clothing. Good housekeeping is required. Avoid inhalation of vapors.

IX REGULATORY INFORMATION

SARA/TITLE III - TOXIC CHEMICALS LIST:

This product contains chemicals subject to the reporting requirements of section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

< 5

584-84-9

Toluene diisocyanate

TSCA INVENTORY STATUS:

Chemical components listed on TSCA Inventory

CALIFORNIA PROPOSITION 65:

This product does not contain toxic chemicals currently on the California List of known carcinogens and reproductive toxins.

DISCLAIMER: THE INFORMATION GIVEN AND THE RECOMMENDATIONS MADE HEREIN APPLY TO OUR PRODUCT(S) ALONE AND NOT IN COMBINATION WITH ANY OTHER PRODUCT(S). SUCH INFORMATION AND RECOMMENDATIONS ARE BASED ON OUR RESEARCH AND ON DATA FROM OTHER RELIABLE SOURCES AND ARE BELIEVED TO BE ACCURATE BUT NO GUARANTEE OF THEIR ACCURACY IS MADE. IN EVERY CASE WE URGE AND RECOMMEND THAT PURCHASERS BEFORE USING ANY PRODUCT MAKE THEIR OWN TESTS TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS AND TO DETERMINE TO THEIR OWN SATISFACTION WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES. THE PRODUCT(S) DISCUSSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED.

MORTON THIOKOL INC.

Morton Chemical Division



Material Safety Data Sheet

SECTION I:**PRODUCT IDENTIFICATION**

PRODUCT NAME: S-113
CHEMICAL NAME: Isocyanate Terminated Polyol
COMMON NAME: Isocyanate Terminated Polyol
CAS NUMBER: None
PRODUCT USE: Coatings and Castings
EMERGENCY PHONE: 815-338-1800 (24 hours/day)
OTHER EMERGENCY PHONE: 312-807-3142
EFFECTIVE DATE: December, 1987
SUPERSEDES: October 15, 1986

SECTION II:**HAZARDOUS INGREDIENTS**

<u>CHEMICAL NAME/COMMON NAME</u>	<u>CAS NO.</u>	<u>% 1</u>	OSHA	ACGIH/TLV	
			<u>PEL 2</u>	<u>TWA</u>	<u>STEL</u>
Toluene Diisocyanate TDI	584-84-9	6-7	0.02ppm	0.005ppm	0.02ppm

1 Typical amount, not a specification

2 Governed by a ceiling limit value (c) - The value which should not be exceeded even instantaneously.

SECTION III:**PHYSICAL DATA**

BOILING POINT (760 mm Hg): 482 degrees F (250 degrees C)
SPECIFIC GRAVITY (Water = 1): 1.073
VAPOR PRESSURE (mm Hg): Not applicable
VAPOR DENSITY (Air=1): > 6
% NONVOLATILE: 93
pH: Not applicable
EVAPORATION RATE (Ether=1): < 1
SOLUBILITY IN WATER: Not applicable
APPEARANCE: Pale Yellow
ODOR: Irritating Pungent Odor

SECTION IV:**FIRE AND EXPLOSION DATA**

FLASH POINT: > 200 degrees F
(> 94 degrees C)

FLAMMABLE LIMITS	<u>Lel:</u> Not Applicable
	<u>Uel:</u> Not Applicable

METHOD USED: SETAFASH

EXTINGUISHING MEDIA: Foam, dry chemical.

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear NIOSH/MSHA approved self-contained positive pressure breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None as far as known.

HAZARDOUS DECOMPOSITION PRODUCTS: If burned, gives off carbon monoxide, carbon dioxide, nitrogen oxides, aromatic amines, aldehydes, and hydrogen cyanide.

ORAL TOXICITY: Unknown for product mixture. Animal experiments indicate that the toxic effects of TDI or polymeric isocyanates, when ingested, are slight. The LD50 in rats for TDI is 5840mg/Kg. From these experiments, it is believed that ingestion of TDI or polymeric isocyanates would not be fatal to humans, but could result in irritation and corrosive action on the mouth and stomach tissue. See 3

DERMAL TOXICITY: Unknown for product mixture. Isocyanates react with skin protein and tissue moisture. If not promptly removed, liquid spills on the skin can cause reddening, swelling, and blistering of exposed skin. REPEATED SKIN CONTACT HAS CAUSED SKIN SENSITIZATION IN HUMANS AND SHOULD BE AVOIDED.

TDI: Skin-Rabbit: 500 mg/24H MOD See Note 3

EYE TOXICITY: Unknown for product mixture. EYE CONTACT - LIQUID ISOCYANATES SPLASHED INTO THE EYES CAN BE HARMFUL TO THE DELICATE EYE TISSUE AND MUST BE AVOIDED. Injury results from reaction of the isocyanate with the eye fluid which may dehydrate the tissue and result in severe irritation of the eyelid and possible damage to the cornea (corneal opacity). Exposure to high concentrations of isocyanate vapor can lead to formation of solid crystals in the eye fluid causing mechanical irritation of the eyes hours after exposure.

TDI Eye-Rabbit: 100 mg SEV See Note 3

INHALATION TOXICITY: Unknown for product mixture. Inhalation of isocyanate vapors can produce severe irritation of the mucous membranes in the respiratory tract, i.e. nose, throat, and lungs. Exposure of humans to concentrations of isocyanate vapor in excess of the maximum acceptable concentration has caused illness characterized by breathlessness, chest discomfort and reduced pulmonary function. Massive exposure to high concentrations has caused, within minutes, irritation of the trachea and larynx and severe coughing spasms. Massive exposure may also lead to bronchitis, bronchial spasm, and/or pulmonary edema (chemical pneumonitis). Concentrations of isocyanate vapors should be maintained below the TLV by engineering controls. Can cause sensitization in humans.

TDI Inhalation-Human TCLO: 0.02 ppm/2Y:PUL See Note 3

TDI Inhalation-Human TCLO: 0.5 ppm:IRR See Note 3

CHRONIC TOXICITY: Unknown for product mixture. Toluene Diisocyanate (TDI) is considered a suspect carcinogen as tested by National Toxicology Program, 1983, in rats and female mice. Administered by gavage to rats, TDI caused subcutaneous neoplasms or cancers in both sexes. Additionally, males developed pancreatic neoplasms and females pancreatic, liver and mammary neoplasms. In mice similarly exposed, TDI caused circulatory neoplasms and cancers (combined) and liver neoplasms in females but was not carcinogenic to males. (NTP 1983 Program Tech Report on Carcinogenic Study of Commercial Grade of TDI.)

EFFECTS OF OVEREXPOSURE:

INGESTION:

Not established for product mixture. Possible nausea, vomiting, and gastrointestinal pain.

SKIN CONTACT:

Not established for product mixture. May cause irritation, dermatitis and possible skin sensitization given prolonged or repeated skin contact.

EYE CONTACT:

Not established for product mixture. Possible irritation, tearing, reddening and blurred vision.

INHALATION:

Not established for product mixture. Possible respiratory tract, mucous membrane irritation, sensitization. Symptoms may be delayed and could include dry cough, chest tightness, wheezing, shortness of breath, asthmatic type symptoms.

ACUTE SYSTEMIC:

Overexposure may cause irritation of the eyes, nose and throat. Severe overexposure may cause weakness, drowsiness, and unconsciousness.

CHRONIC SYSTEMIC:

Signs and symptoms from chronic exposure resemble those from acute mishaps but are in part systemically more severe. Extended exposure to isocyanates can cause sensitization resulting in asthmatic type symptoms.

NOTES: Toxicity testing on the product mixture has not been conducted. Comments listed in HEALTH HAZARD DATA pertain to the isocyanate listed in HAZARDOUS INGREDIENTS.

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE:

Persons with preexisting skin disorders may be more susceptible to isocyanate. In persons with impaired pulmonary function, especially those with obstructive airway diseases, the breathing of isocyanate vapors may cause exacerbation of symptoms due to irritant properties of the isocyanate.

SECTION VI:

EMERGENCY HEALTH AND FIRST AID PROCEDURES

EYE CONTACT: Immediately flush with water for 15 minutes lifting the upper and lower eyelids occasionally and obtain immediate medical attention.

SKIN CONTACT: Remove contaminated clothing. Wash exposed areas thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. If irritation is present after washing, get medical attention.

INHALATION: Move to an area with fresh air and free from risk of further exposure. Administer artificial respiration as required. Obtain medical attention.

INGESTION: Do not induce vomiting. Obtain immediate medical attention. If unavailable, contact nearest Poison Control Center.

NOTE TO PHYSICIAN: May cause weakness, drowsiness, unconsciousness, irritation of eyes, nose and throat, nausea, possible sensitization, coughing, tightness of chest (TDI). No known antidote. Supportive therapy is recommended. Careful lavage may be indicated after ingestion.

SECTION VII:**REACTIVITY DATA**

STABILITY: Stable under ordinary storage conditions.

HAZARDOUS CONDITIONS TO AVOID: Storage at temperatures above 110 degrees F (43 degrees C) and moisture contact.

INCOMPATIBILITY: (MATERIALS TO AVOID) Oxidizing substances.

CAN HAZARDOUS POLYMERIZATION OCCUR: No.

HAZARDOUS DECOMPOSITION PRODUCTS AND CONDITIONS: If burned, gives off carbon monoxide, carbon dioxide, nitrogen oxides, aromatic amines, aldehydes, and hydrogen cyanide.

SECTION VIII:**SPILL OR LEAK PROCEDURES**

RESPONSE TO SPILLS: Stop discharge and contain spill or contaminated material using dike, barrier or other means. Recover with pumping equipment, vacuum truck, sorbent vermiculite or other means. Place contaminated material in suitable container(s) for further handling.

HAZARDS TO BE AVOIDED: Do not flush into stream, other bodies of water or storm sewer. Avoid contact with skin or clothing. Other hazards see Section IV FIRE AND EXPLOSION DATA and Section V HEALTH HAZARD DATA.

SPILL NOTIFICATION: Check Federal and State reporting regulations.

DISPOSAL METHODS:

- 1 Recycle if feasible.
- 2 Incinerate at authorized facility.
- 3 Treatment at industrial or liquid treatment facility.
- 4 Landfill after solidification in a facility authorized to receive waste.

NOTE: THIS MATERIAL, IF BEING DISCARDED, SHOULD BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

SECTION IX:**CONTROL MEASURES**

RESPIRATORY PROTECTION: Wear NIOSH-MSHA approved self-contained positive pressure breathing apparatus as necessary within equipment limitations. Comply with OSHA 1910.134 (CFR), respiratory protection. Contaminant levels will vary dependent on the operation. Industrial hygiene consultation is recommended to assist in respirator selection, use and training.

FOR HANDS, BODY: Chemical resistant gloves recommended for hand protection, work clothing for general body protection.

FOR EYES: Wear safety glasses, chemical goggles or face shield (eight inch minimum).

VENTILATION: Provide adequate ventilation to minimize inhalation. Mechanical (local exhaust) recommended for all spray operations and elevated temperature uses.

SECTION X:**SPECIAL PRECAUTIONS**

RECOMMENDED STORAGE PRACTICE AND CONDITIONS: Store between 50 and 100 degrees F (10 and 38 degrees C). Storage at higher temperatures causes polymerization.

OTHER PRECAUTIONS: For industrial use only. Eye wash and shower should be available. Use only under well ventilated conditions. For personal hygiene protection, personnel should wash thoroughly after handling product. Always wash up before eating, smoking, or using washroom facilities. Do not breathe vapor. Do not contact eyes, skin, and or clothing.

SECTION XI:**LABELING INFORMATION**

DOT SHIPPING NAME:	Not regulated by DOT
DOT IDENTIFICATION NO.:	Not applicable
DOT LABEL:	Not applicable
MORTON PRECAUTIONARY LABEL:	177

SECTION XII:**USER'S RESPONSIBILITY**

A bulletin such as this cannot be expected to cover all possible situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions in addition to those described herein, are required. Any health hazard and safety information contained herein should be passed on to your customers or employees, as the case may be. Morton Thiokol, Inc. must rely on the user to utilize the information we have supplied to develop work practice guidelines and employee instructional programs for the individual operation.

DISCLAIMER OF LIABILITY

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO THE INFORMATION CONTAINED HEREIN OR THE CHEMICAL TO WHICH THE INFORMATION REFERS. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of applicable laws or regulations.

Morton Thiokol, Inc.
Morton Chemical Division
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Chicago, Illinois 60606-1292
(312) 807-2000

4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes 1

☒ No 2

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

☐

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	<input checked="" type="radio"/> 1	2	3	4	5
Store	<input checked="" type="radio"/> 1	2	3	4	5
Dispose	<input checked="" type="radio"/> 1	2	3	4	5
Transport	<input checked="" type="radio"/> 1	2	3	4	5

☐ Mark (X) this box if you attach a continuation sheet.

4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles ≥ 10 microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

☐

<u>Physical State</u>		<u>Manufacture</u>	<u>Import</u>	<u>Process</u>	<u>Store</u>	<u>Dispose</u>	<u>Transport</u>
Dust	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____
Powder	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____
Fiber	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____
Aerosol	<1 micron	_____	_____	_____	_____	_____	_____
	1 to <5 microns	_____	_____	_____	_____	_____	_____
	5 to <10 microns	_____	_____	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 5 ENVIRONMENTAL FATE

PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) N/A (1/M cm) at _____ nm
 Reaction quantum yield, ϕ N/A at _____ nm
 Direct photolysis rate constant, k_p , at ... N/A 1/hr _____ latitude

b. Oxidation constants at 25°C:

For 1O_2 (singlet oxygen), k_{ox} N/A 1/M hr
 For RO_2 (peroxy radical), k_{ox} N/A 1/M hr

c. Five-day biochemical oxygen demand, BOD_5 ... N/A mg/l

d. Biotransformation rate constant:

For bacterial transformation in water, k_b ... N/A 1/hr
 Specify culture N/A

e. Hydrolysis rate constants:

For base-promoted process, k_b N/A 1/M hr
 For acid-promoted process, k_a N/A 1/M hr
 For neutral process, k_n N/A 1/hr

f. Chemical reduction rate (specify conditions) N/A

g. Other (such as spontaneous degradation) ... N/A

☐ Mark (X) this box if you attach a continuation sheet.

PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

<u>Media</u>	<u>Half-life (specify units)</u>
Groundwater	N/A
Atmosphere	N/A
Surface water	N/A
Soil	

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

<u>CAS No.</u>	<u>Name</u>	<u>Half-life (specify units)</u>	<u>Media</u>
			in
			in
			in
			in

5.03 Specify the octanol-water partition coefficient, K_{ow} ... N/A at 25°C
 Method of calculation or determination

5.04 Specify the soil-water partition coefficient, K_d N/A at 25°C
 Soil type

5.05 Specify the organic carbon-water partition coefficient, K_{oc} N/A at 25°C

5.06 Specify the Henry's Law Constant, H N/A atm-m³/mole

☐ Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

Bioconcentration Factor

Species

Test¹

N/A

N/A

N/A

¹Use the following codes to designate the type of test:

F = Flowthrough

S = Static

☐ Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of the listed substance sold or transferred in bulk during the reporting year.

☐

<u>Market</u>	<u>Quantity Sold or Transferred (kg/yr)</u>	<u>Total Sales Value (\$/yr)</u>
Retail sales		
Distribution -- Wholesalers		
Distribution -- Retailers		
Intra-company transfer		
Repackagers		
Mixture producers		
Article producers		
Other chemical manufacturers or processors		
Exporters		
Other (specify)		

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist for the listed substance and state the cost of each substitute. A commercially feasible substitute is one which is economically and technologically feasible to use in your current operation, and which results in a final product with comparable performance in its end uses.

CBI

☐

<u>Substitute</u>	<u>Cost (\$/kg)</u>
NONE	

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

General Instructions:

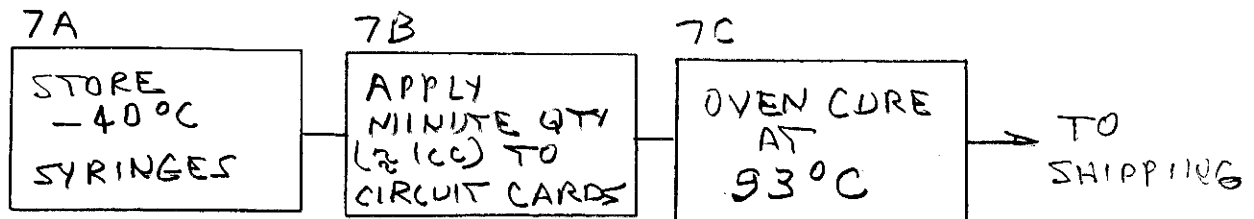
For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

☐ Process type APPLICATION OF THERMAL ADHESIVE



☐ Mark (X) this box if you attach a continuation sheet.

7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

☐ Process type

N / A

☐ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type _____

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
<u>7A</u>	<u>FREEZER</u>	<u>-40°C</u>	<u>Amb</u>	<u>STAINLESS STEEL</u>
<u>7B</u>	<u>PLASTIC SYRINGE</u>	<u>-40°C to 0°C</u>	<u>Amb</u>	<u>PLASTIC</u>
<u>7C</u>	<u>OVEN</u>	<u>20 to 400°C</u>	<u>Amb</u>	<u>STAINLESS STEEL</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type N/A

Process Stream ID Code	Process Stream Description	Physical State ¹	Stream Flow (kg/yr)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

¹Use the following codes to designate the physical state for each process stream:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure)
 SO = Solid
 SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☐ Mark (X) this box if you attach a continuation sheet.

CBI

[]

[illegible]

7.06 continued below

[]

7.06 (continued)

¹For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

<u>Additive Package Number</u>	<u>Components of Additive Package</u>	<u>Concentrations (% or ppm)</u>
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

²Use the following codes to designate how the concentration was determined:

A = Analytical result
E = Engineering judgement/calculation

³Use the following codes to designate how the concentration was measured:

V = Volume
W = Weight

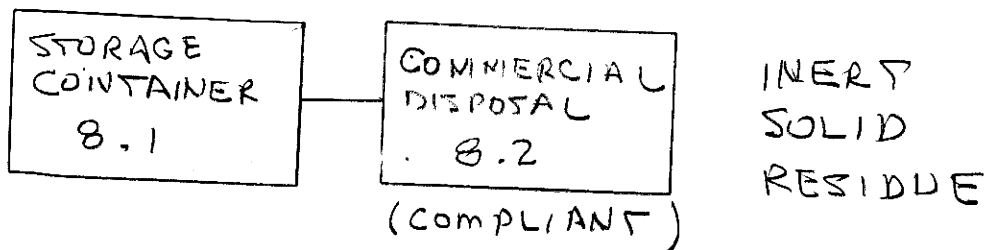
☐ Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

☐ Process type DISPOSAL



☐ Mark (X) this box if you attach a continuation sheet.

PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

[] Process type N/A

[illegible]

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

¹Use the following codes to designate the type of hazardous waste:

I = Ignitable
C = Corrosive
R = Reactive
E = EP toxic
T = Toxic
H = Acutely hazardous

²Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)
GU = Gas (uncondensable at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

³ For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

<u>Additive Package Number</u>	<u>Components of Additive Package</u>	<u>Concentrations (% or ppm)</u>
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

⁴ Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

⁵Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

⁶Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

<u>Code</u>	<u>Method</u>	<u>Detection Limit</u> <u>(± ug/l)</u>
<u>1</u>	_____	_____
<u>2</u>	_____	_____
<u>3</u>	_____	_____
<u>4</u>	_____	_____
<u>5</u>	_____	_____
<u>6</u>	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

CBI

[illegible]

²Use the codes provided in Exhibit 8-2 to designate the management methods

58

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in CBI your process block or residual treatment block flow diagram(s).

☐

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1						
2						
3						

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

☐

N/A SOLID INERT RESIDUE

Incinerator	Air Pollution Control Device ¹	Types of Emissions Data Available
1		
2		
3		

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

¹Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)

E = Electrostatic precipitator

O = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

CBI

☐

<u>Data Element</u>	<u>Data are Maintained for:</u>		<u>Year in Which</u>	<u>Number of</u>
	<u>Hourly</u>	<u>Salaried</u>	<u>Data Collection</u>	<u>Years Records</u>
	<u>Workers</u>	<u>Workers</u>	<u>Began</u>	<u>Are Maintained</u>
Date of hire	_____	_____	_____	_____
Age at hire	_____	_____	_____	_____
Work history of individual before employment at your facility	_____	_____	_____	_____
Sex	_____	_____	_____	_____
Race	_____	_____	_____	_____
Job titles	_____	_____	_____	_____
Start date for each job title	_____	_____	_____	_____
End date for each job title	_____	_____	_____	_____
Work area industrial hygiene monitoring data	_____	_____	_____	_____
Personal employee monitoring data	_____	_____	_____	_____
Employee medical history	_____	_____	_____	_____
Employee smoking history	_____	_____	_____	_____
Accident history	_____	_____	_____	_____
Retirement date	_____	_____	_____	_____
Termination date	_____	_____	_____	_____
Vital status of retirees	_____	_____	_____	_____
Cause of death data	_____	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

a.	b.	c.	d.	e.
<u>Activity</u>	<u>Process Category</u>	<u>Yearly Quantity (kg)</u>	<u>Total Workers</u>	<u>Total Worker-Hours</u>
Manufacture of the listed substance	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____
On-site use as reactant	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____
On-site use as nonreactant	Enclosed	_____	_____	_____
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____
On-site preparation of products	Enclosed	0.1	1	6
	Controlled Release	_____	_____	_____
	Open	_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

☐

Labor Category

Descriptive Job Title

A

ELECTRONIC ASSEMBLY

B

C

D

E

F

G

H

I

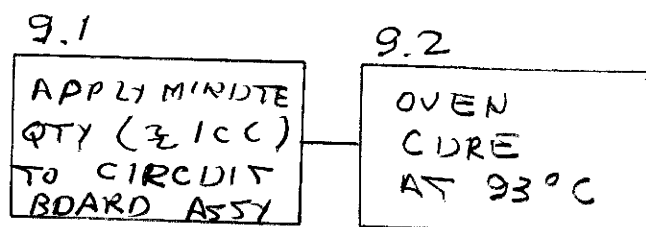
J

☐ Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

☐ Process type APPLY ADHESIVE



☐ Mark (X) this box if you attach a continuation sheet.

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type APPLY ADHESIVE

Work Area ID

Description of Work Areas and Worker Activities

1	<u>VENTILATED AREA - APPLY MINUTE QTY</u>
2	<u></u>
3	<u></u>
4	<u></u>
5	<u></u>
6	<u></u>
7	<u></u>
8	<u></u>
9	<u></u>
10	<u></u>

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type APPLY ADHESIVE

Work area

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
<u>A</u>	<u>1</u>	<u>DIRECT SKIN CONTACT</u>	<u>SO</u>	<u>A</u>	<u>2</u>

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)	SY = Sludge or slurry
GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)	AL = Aqueous liquid
SO = Solid	OL = Organic liquid
	IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less	D = Greater than 2 hours, but not exceeding 4 hours
B = Greater than 15 minutes, but not exceeding 1 hour	E = Greater than 4 hours, but not exceeding 8 hours
C = Greater than one hour, but not exceeding 2 hours	F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type APPLY ADHESIVE

Work area

<u>Labor Category</u>	<u>8-hour TWA Exposure Level (ppm, mg/m³, other-specify)</u>	<u>15-Minute Peak Exposure Level (ppm, mg/m³, other-specify)</u>
<u>A</u>	<u>NIL</u>	<u>NIL</u>

☐ Mark (X) this box if you attach a continuation sheet.

PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

[]

<u>Sample/Test</u>	<u>Work Area ID</u>	<u>Testing Frequency (per year)</u>	<u>Number of Samples (per test)</u>	<u>Who Samples¹</u>	<u>Analyzed In-House (Y/N)</u>	<u>Number of Years Records Maintained</u>
Personal breathing zone						
General work area (air)						
Wipe samples						
Adhesive patches						
Blood samples						
Urine samples						
Respiratory samples						
Allergy tests						
Other (specify)						
Other (specify)						
Other (specify)						

¹Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist

B = Insurance carrier

C = OSHA consultant

D = Other (specify) _____

[] Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

<input type="checkbox"/>	<u>Sample Type</u>	<u>Sampling and Analytical Methodology</u>

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

CBI

<input type="checkbox"/>	<u>Equipment Type</u> ¹	<u>Detection Limit</u> ²	<u>Manufacturer</u>	<u>Averaging Time (hr)</u>	<u>Model Number</u>

¹Use the following codes to designate personal air monitoring equipment types:

- A = Passive dosimeter
- B = Detector tube
- C = Charcoal filtration tube with pump
- D = Other (specify) _____

Use the following codes to designate ambient air monitoring equipment types:

- E = Stationary monitors located within work area
- F = Stationary monitors located within facility
- G = Stationary monitors located at plant boundary
- H = Mobile monitoring equipment (specify) _____
- I = Other (specify) _____

²Use the following codes to designate detection limit units:

- A = ppm
- B = Fibers/cubic centimeter (f/cc)
- C = Micrograms/cubic meter (μm^3)

☐ Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

☐

Test Description

Frequency
(weekly, monthly, yearly, etc.)

☐ Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type APPLY ADHESIVE

Work area

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	<u>Y</u>	<u>1987</u>	<u>N'</u>	
General dilution				
Other (specify)				
Vessel emission controls				
Mechanical loading or packaging equipment				
Other (specify)				

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type _____

Work area _____

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type APPLY ADHESIVE

Work area

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>Y</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>Y</u>
Coveralls	<u>Y</u>
Bib aprons	<u>Y</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
<u>VENTILATED BOOTH</u>	

☐ Mark (X) this box if you attach a continuation sheet.

9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type _____

Work Area	Respirator Type	Average Usage ¹	Fit Tested (Y/N)	Type of Fit Test ²	Frequency of Fit Tests (per year)
1	* POSITIVE AIR RESP	A	N		

¹Use the following codes to designate average usage:

A = Daily
 B = Weekly
 C = Monthly
 D = Once a year
 E = Other (specify) _____

²Use the following codes to designate the type of fit test:

QL = Qualitative
 QT = Quantitative

3M BRAND ORGANIC VAPOR AND ACID GAS
 RESPIRATOR NO 8725 (NIOSH APPROVED)

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type APPLY ADHESIVE

Work area

LIMITED ACCESS

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type APPLY ADHESIVE

Work area

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping		X		
Vacuuming		X		
Water flushing of floors				
Other (specify)				

☐ Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

Yes 1

☒ No 2

Emergency exposure

Yes 1

☒ No 2

If yes, where are copies of the plan maintained?

Routine exposure: _____

Emergency exposure: _____

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

Yes 1

☒ No 2

If yes, where are copies of the plan maintained? _____

Has this plan been coordinated with state or local government response organizations?
Circle the appropriate response.

Yes 1

No 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist 1

Insurance carrier 2

OSHA consultant 3

☒ Other (specify) MANAGER OF FACILITIES 4

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 10 ENVIRONMENTAL RELEASE

General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

- ☐ Industrial area 1
- Urban area 2
- Residential area 3
- Agricultural area 4
- Rural area 5
- Adjacent to a park or a recreational area 6
- Within 1 mile of a navigable waterway 7
- Within 1 mile of a school, university, hospital, or nursing home facility 8
- Within 1 mile of a non-navigable waterway 9
- Other (specify) _____ 10

☐ Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude 28 ° 0 , "

Longitude 82 ° 0 , "

UTM coordinates Zone _____, Northing _____, Easting _____

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation inches/year

Predominant wind direction

10.04 Indicate the depth to groundwater below your facility.

Depth to groundwater meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of CBI Y, N, and NA.)

☐

On-Site Activity	Environmental Release		
	Air	Water	Land
Manufacturing			
Importing			
Processing	N/A	N/A	N/A
Otherwise used			
Product or residual storage			
Disposal			
Transport			

☐ Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

☐ Process type APPLY ADHESIVE

<u>Stream ID Code</u>	<u>Control Technology</u>	<u>Percent Efficiency</u>
<u>8.1</u>	<u>N/A</u>	<u>N/A</u>

☐ Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

- 10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type APPLY ADHESIVE

Point Source
ID Code

Description of Emission Point Source

B.1

N/A

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics -- Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

<input type="checkbox"/> Point Source ID Code	Physical State ¹	Average Emissions (kg/day)	Frequency ² (days/yr)	Duration ³ (min/day)	Average Emission Factor ⁴	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
8-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

¹Use the following codes to designate physical state at the point of release:

G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) _____

²Frequency of emission at any level of emission

³Duration of emission at any level of emission

⁴Average Emission Factor — Provide estimated (\pm 25 percent) emission factor (kg of emission per kg of production of listed substance)

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m) ¹	Building Width(m) ²	Vent Type ³
B-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

¹Height of attached or adjacent building

²Width of attached or adjacent building

³Use the following codes to designate vent type:

H = Horizontal

V = Vertical

☐ Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

☐

Point source ID code 8.1

Size Range (microns)

Mass Fraction (% \pm % precision)

< 1

N/A

≥ 1 to < 10

≥ 10 to < 30

≥ 30 to < 50

≥ 50 to < 100

≥ 100 to < 500

≥ 500

Total = 100%

☐ Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

☐

Process type APPLY ADHESIVE

Percentage of time per year that the listed substance is exposed to this process type %

N/A

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					Greater than 99%
	Less than 5%	5-10%	11-25%	26-75%	76-99%	
Pump seals ¹						
Packed						
Mechanical						
Double mechanical ²						
Compressor seals ¹						
Flanges						
Valves						
Gas ³						
Liquid						
Pressure relief devices ⁴ (Gas or vapor only)						
Sample connections						
Gas						
Liquid						
Open-ended lines ⁵ (e.g., purge, vent)						
Gas						
Liquid						

¹List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

☐

Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

²If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

³Conditions existing in the valve during normal operation

⁴Report all pressure relief devices in service, including those equipped with control devices

⁵Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

☐

N/A

a. Number of Pressure Relief Devices	b. Percent Chemical in Vessel ¹	c. Control Device	d. Estimated Control Efficiency ²

¹Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

²The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

☐ Mark (X) this box if you attach a continuation sheet.

- 10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type APPLY ADHESIVE

N/A

<u>Equipment Type</u>	<u>Leak Detection Concentration (ppm or mg/m³) Measured at Inches from Source</u>	<u>Detection Device¹</u>	<u>Frequency of Leak Detection (per year)</u>	<u>Repairs Initiated (days after detection)</u>	<u>Repairs Completed (days after initiated)</u>
Pump seals					
Packed					
Mechanical					
Double mechanical					
Compressor seals					
Flanges					
Valves					
Gas					
Liquid					
Pressure relief devices (gas or vapor only)					
Sample connections					
Gas					
Liquid					
Open-ended lines					
Gas					
Liquid					

¹Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

0 = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

120

- 10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

☐

Vessel Type ¹	Floating Roof ² Seals	Composition of Stored ³ Materials	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Operat- ing Vessel Volume (l)	Vessel Emission ⁴ Controls	Design Flow ⁵ Rate	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate ⁶

¹Use the following codes to designate vessel type:

F = Fixed roof
CIF = Contact internal floating roof
NCIF = Noncontact internal floating roof
EFR = External floating roof
P = Pressure vessel (indicate pressure rating)
H = Horizontal
U = Underground

²Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary
MS2 = Shoe-mounted secondary
MS2R = Rim-mounted, secondary
LM1 = Liquid-mounted resilient filled seal, primary
LM2 = Rim-mounted shield
LMW = Weather shield
VM1 = Vapor mounted resilient filled seal, primary
VM2 = Rim-mounted secondary
VMW = Weather shield

³Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

⁴Other than floating roofs

⁵Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

⁶Use the following codes to designate basis for estimate of control efficiency:

C = Calculations
S = Sampling

PART E NON-ROUTINE RELEASES

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

Release	Date Started	Time (am/pm)	Date Stopped	Time (am/pm)
1				
2				
3				
4				
5				
6				

10.24 Specify the weather conditions at the time of each release.

Release	Wind Speed (km/hr)	Wind Direction	Humidity (%)	Temperature (°C)	Precipitation (Y/N)
1					
2					
3					
4					
5					
6					

☐ Mark (X) this box if you attach a continuation sheet.

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